

# *ABSP : Biotechnology Development in Africa – 1991 – 2002*

*Institute of International Agriculture  
Michigan State University*

USAID – African Partnership in  
Biotechnology : Strategies for  
Biotechnology in Africa  
Nairobi, Kenya  
21-23 October 2002

Agricultural Biotechnology Support Project





## *What is “ABSP”*

- ▶ The Agricultural Biotechnology Support Project (ABSP) is a USAID-funded project based in the Institute of International Agriculture at the Michigan State University
- ▶ Since 1991 ABSP, in collaboration with other US universities and the private sector, has **integrated research, product development and policy/regulatory development** to assist developing countries in accessing and generating biotechnology and in establishing a regulatory framework for the adoption of biotech crops



## *What is “ABSP”*

- ▶ ABSP focused on plant biotechnology applications
- ▶ Capacity building in: R&D, Intellectual Property Rights (IPR), Technology Transfer and Biosafety
- ▶ Partner Countries: Costa Rica, **Egypt**, India, Indonesia, **Kenya**, **Morocco**, **South Africa**
- ▶ Regional Partners: **East and Central Africa**, **Southern Africa**



## *Goal of ABSP*

- ▶ To improve the capacity and policy environment for the use, management, and commercialization of agricultural biotechnology in Developing Countries

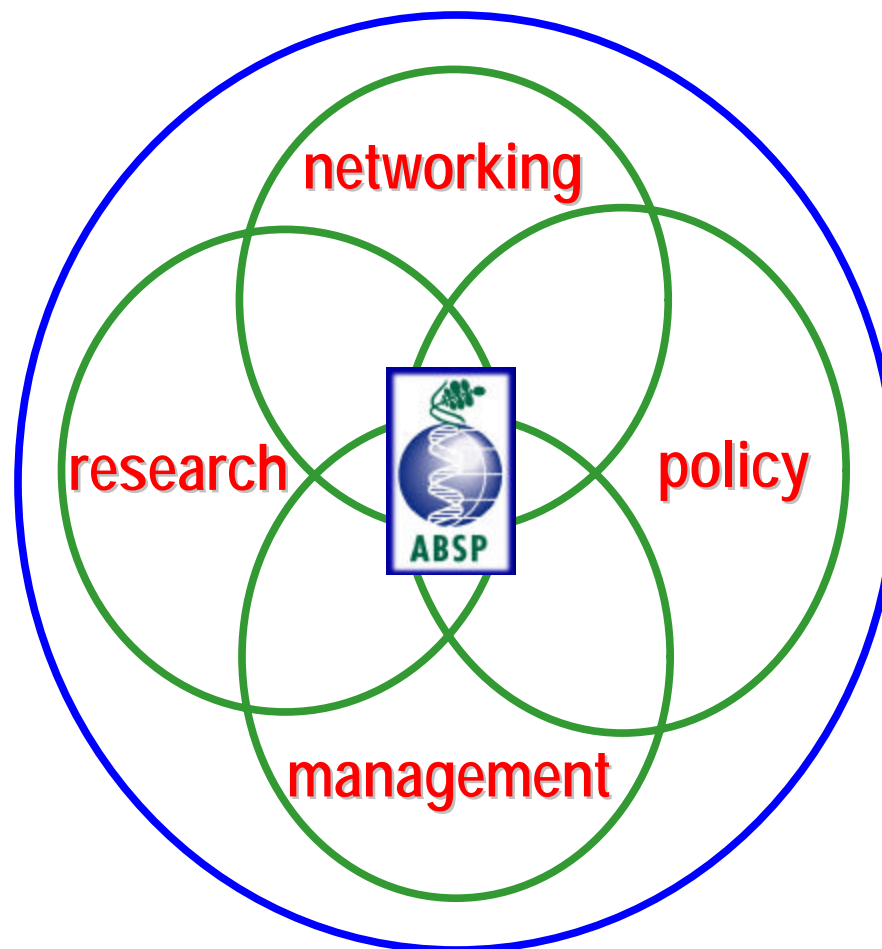
### Objectives :

- Establish a policy framework in developing countries that promotes the use and adoption of agricultural biotechnology products
- Improve marketed crops through strategic research partnerships between the US and Developing Country public and private sectors



# *ABSP's integrated approach*

*to technology  
development  
& transfer*





# *ABSP Partners, 1991-2002*

## Public sector

- Michigan State University
- Cornell University
- Texas A & M University
- Scripps Research Institute
- University of Arizona
- University of Texas at Dallas
- Ohio State University
- Virginia Tech
- UC-Berkeley
- CABI

## Private sector

- Asgrow
- Monsanto Co.
- Garst Seed (Syngenta)
- DNA Plant Technology (DNAP)
- Pioneer Hi-Bred



# *ABSP Partners, 1991-2002*

## Developing Country partners

- Central Research Institute for Food Crops (CRIFC), Indonesia
- **Agricultural Genetic Engineering and Research Institute (AGERI), Egypt**
- **Kenya Agriculture Research Institute (KARI)**
- Agribiotecnologia de Costa Rica
- Fitotek Unggul, Indonesia
- **DPVCTRF, Morocco**
- **ASARECA, East Africa**
- **ARC-Roodeplaat, South Africa**



# *ABSP Capacity Building Initiatives*

## Bilateral

- Biosafety – Egypt, Kenya and Indonesia
- IPR & Tech. Transfer – Egypt, Kenya, Indonesia

## Regional

- Biotechnology & Biosafety – East & Central Africa, ASARECA
- Biosafety – Southern Africa, SARB





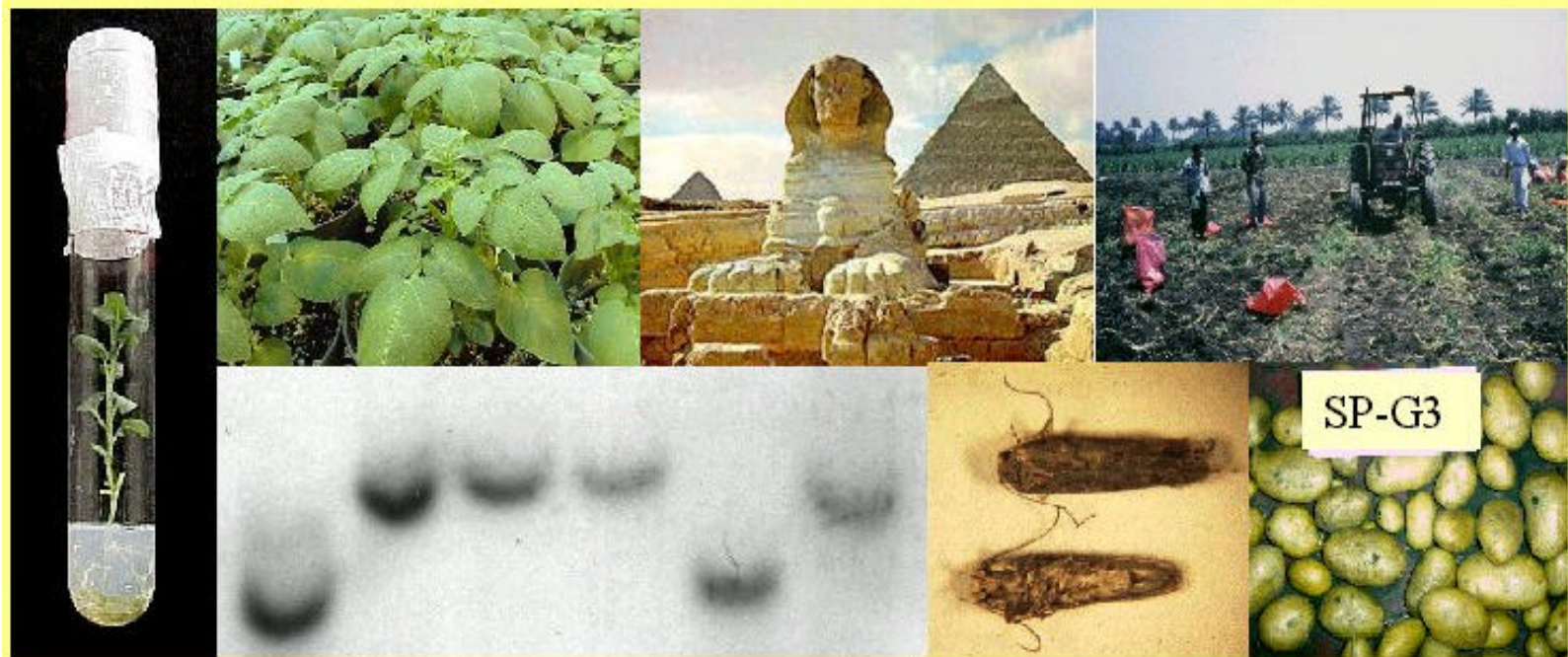
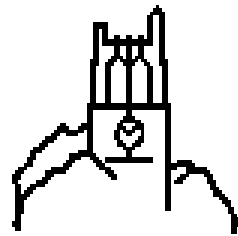
# *ABSP & Egypt : Capacity Building at AGERI*



*Overall collaboration between ABSP and AGERI began in 1992, with the aim of producing pest and disease resistant tomato, maize, cucurbits, and potatoes.*

- Development of tuber moth resistance in **potato**
- Development of potyvirus resistant **cucurbits**
- Development of stem borer resistance in **maize**
- Production of tomato yellow leaf curl virus (TYLCV) resistant **tomato**

# *Development of tuber moth resistance in potatoes : ABSP, MSU & AGERI*

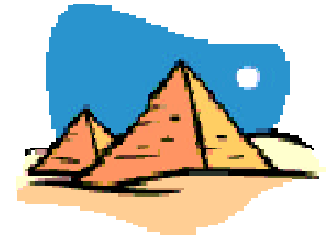


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# *ABSP & Egypt : Capacity Building at AGERI*



## Biosafety

- Individual scientists attended biosafety training workshops
- Two-week biosafety internship program
- ABSP regional biosafety workshop (Cairo, 1994)
- Biocontainment greenhouse facility established at AGERI
- Biosafety guidelines drafted and approved in 1995
- Egyptian National Biosafety Committee (NBC) established in 1995
- Field trials of transgenic crops (potatoes, cucurbits and tomatoes)



# *ABSP & Egypt - Capacity Building*

## Intellectual Property Rights (IPR)

- ❑ Individual training of scientists and those directly involved in developing transgenic materials
- ❑ Workshops that included policy makers and government officials
- ❑ IPR Consultant performed IP audit for AGERI
- ❑ Initiation of communication between scientists working in biotechnology programs and legislators and policy makers
- ❑ Development of technology in partnership with international seed companies - "bargaining chips"
- ❑ Egyptian scientists and TT personnel participate in internships and IP/TT short courses presented at MSU
- ❑ Participation in Tech. Transfer meetings in the USA





# *IPR Impacts in Egypt*



- General awareness established at Government level on Tech. Transfer and IP
- Technology Transfer policies adopted within Agricultural Research Centre and AGERI in Egypt
- Office of Technology Transfer and Intellectual Property (OTTIP) established at AGERI



# *ABSP and ASARECA*

## *Association for Strengthening Agricultural Research in Eastern and Central Africa*

**ABSP is working with ASARECA to develop a regional initiative in biotechnology and biosafety :**

- Formation of ASARECA Biotechnology Working Group in 2000
- Commission working papers on biotech priorities for crops in the region and regional biosafety initiatives in 2001/2002
- Working Group meetings in 2000 and 2002
- Stakeholder workshops on biotechnology and biosafety in June and August 2002
- Proposal development during August – October 2002







# *Biotechnology Inventory*

“An Inventory of Agricultural Biotechnology for the Eastern and Central Africa Region”

*Andrea Johanson & Catherine L. Ives*

*Highlights the current status of biotechnology in East and Central African crops and the future potential of biotechnology for their genetic improvement.*

- <http://www.iaa.msu.edu/absp/inventory1.html>



**ASARECA**  
[www.asareca.org](http://www.asareca.org)

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## *ABSP and Southern Africa*

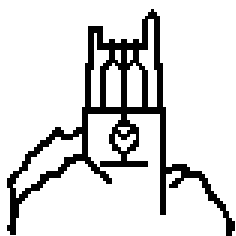
- Field testing tuber moth resistant potatoes in South Africa
- Southern Africa Regional Biosafety Program (SARB)
- Capacity Building and Training



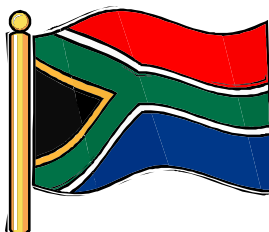




# *Field Trials in South Africa : ABSP, MSU, & ARC-Roodeplaat VOPI*



ARC • LNR



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# *ABSP and Southern Africa*



## **Southern Africa Regional Biosafety Program (SARB)**

**Overall Objective** : *"To build regional policy and technical capacity in Southern Africa to support science based regulation of the development, commercial application and trade in agricultural products derived from modern biotechnology"*

**Specific Objective** : *"To lay the regulatory foundation that will support the field testing of genetically engineered products in at least 4 of the 7 target countries in Southern Africa"*



# *ABSP : Lessons Learned*

- ➊ R&D projects must be based on local priorities and local decision making to foster ownership
- ➋ R&D should be focused on a limited number of projects that can lead to high impact products in the short to medium term
- ➌ Technology Development and collaborations can be the driving force for effective national policy development
- ➍ Co-development better than technology transfer -“bring something to the table”
- ➎ IP considerations should be integrated in projects from the outset
- ➏ If applicable, biosafety regulatory packages should be prepared early in the product development phase
- ➐ Public-Private sector partnerships are critical to both R&D and “commercialization”



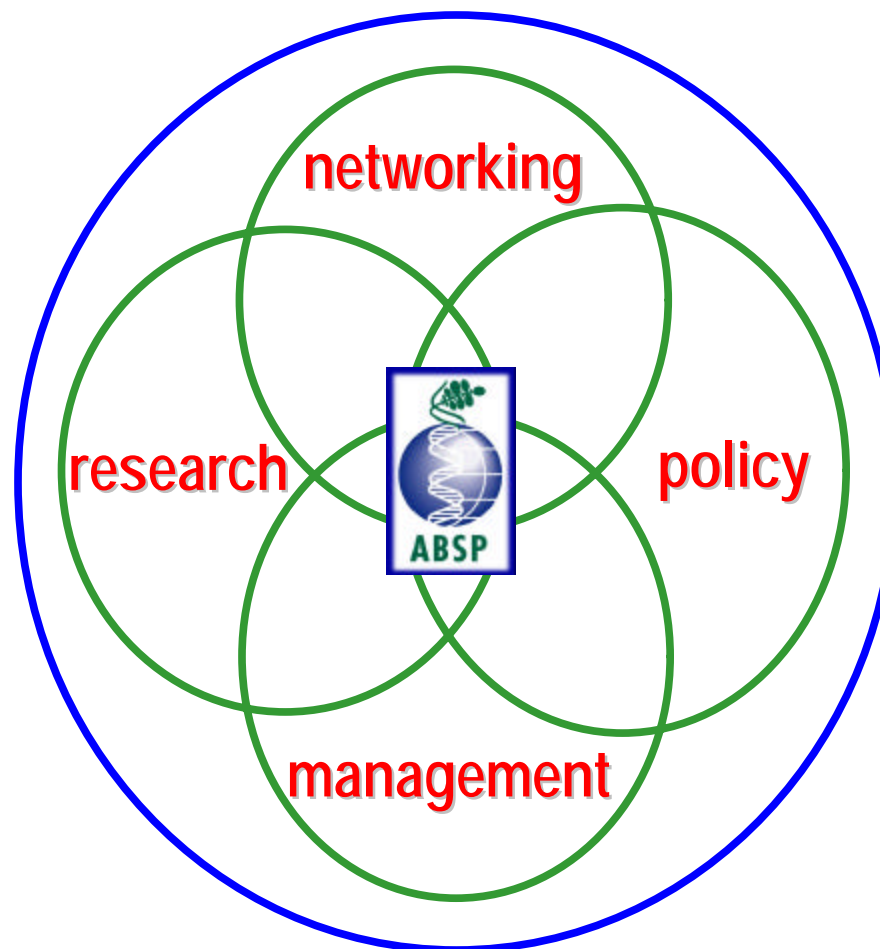
## *ABSP : Lessons Learned*

- ✿ The developing country Private Sector is important for the dissemination of resulting products
- ✿ Enabling Policy environment for biotechnology (both national and institutional) is critical in developing countries – biosafety regulatory framework ; IPR ; Technology Transfer
- ✿ Build support for R&D by reaching out to [all stakeholders](#) and raising their capacity to communicate the biotech message effectively – communication and outreach
- ✿ Build local capacity to manage and sustain all project activities
- ✿ Build effective networks among all consortium partners
- ✿ Blend country and regional approaches



# *ABSP : 1991 - 2002*

*ABSP is a  
successful model  
for Agricultural  
Biotechnology  
development*





Thank you for your attention !



<http://www.iaa.msu.edu/absp>

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